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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,962	03/05/2001	Toshihisa Inoue	45455/250498	9837

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EXAMINER

QUASH, ANTHONY G

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 05/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/701.962

Applicant(s)

INOUE ET AL.

Examiner

Anthony Quash

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Claim 3 has been cancelled by applicants' amendment, paper number 13.

Claim Objections

Claim 4 is objected to as being dependent upon a cancelled claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seto [740] in view of Conover [165]. As per claim 1, Seto [740] teaches an ion activity-measuring device for measuring activity of an ion in a sample, which comprises at least one pair of electrodes (101-103), one of the electrodes being in contact with liquid sample, and the other being in contact with a reference liquid, a first liquid reservoir for the liquid sample, a second liquid reservoir for the reference liquid, and a hydrophobic bridge (600), and wherein the device is adapted to supplying the liquid sample and the reference liquid substantially at the same time. See Seto [740] abstract, figs. 1-2 column 1, col. 2 lines 1-20, 40-50, col. 3 lines 10-52, 59-62, col. 4 lines 60-67, col. 5 lines 1-20, 55-65, and col. 6 lines 1-6. However, Seto [740] does not specifically state

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the hydrophobic bridge being produced by treating the portions contacting with the liquid reservoirs with a spreading accelerator. Conover [165] does teach the hydrophobic bridge being produced by treating the portions contacting with the liquid reservoirs with a spreading accelerator. In addition, Conover [165] teaches a hydrophobic bridge of which portions contacting with the liquid reservoirs are hydrophilic. See Conover [165] abstract, figs. 1-3, 6-6B, col. 1 lines 10-65, col. 2 lines 40-45, 60-69, col. 3 lines 1-30, 55-65, col. 7 lines 10-15, 24-40, columns 9,11,13, and col. 15 lines 30-69. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the hydrophobic bridge be produced by treating the portions contacting with the liquid reservoirs with a spreading accelerator in order to make the bridge conductive for carrying out different types of analysis as taught by Conover [165].

As per claim 2, Seto [740] teaches the hydrophobic bridge being produced from at least one selected from the group consisting of polyester, nylon, polypropylene, rayon, and polyethylene. See Seto [740] col. 5 lines 1-20.

As per claim 4, Conover [165] teaches the spreading accelerator being at least one selected from the group consisting of a surfactant and a hydrophilic polymer. See Conover [165] col. 11 lines 15-30.

As per claim 5, Seto [740] teaches the hydrophobic bridge being made of nonwoven fabric. See Seto [740] col. 5 lines 1-20. However, it does not specifically teach the liquid reservoirs being formed by bonding a cover plate and a substrate, at least one of which has a resist film having a liquid reservoir form. Conover [165] does

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teach the liquid reservoirs being formed by bonding a cover plate and a substrate, at least on of which has a resist film having a liquid reservoir form. See Conover [165] figs. 1-3, 6-6B, and col. 9 lines 8-33. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the liquid reservoirs being formed by bonding a cover plate and a substrate, at least on of which has a resist film having a liquid reservoir form in order to prevent leakage of the sample or solutions onto porous material or between or into the two sections of frame or body as taught in Conover [165].

As per claim 6-7, Seto [740] in view of Conover [165] teach all aspects of the claim except for embedding nonwoven fabric in the cover plate to bond the nonwoven fabric to the cover plate nor does it teach the nonwoven fabric and the cover plate being bonded by ultrasonic fusion. Conover [165] does however; teach bonding the cover plate by ultrasonic fusion. See Conover [165] col. 9 lines 20-34. It would have been obvious to one having ordinary skill in the art at the time the invention was made to embed nonwoven fabric in the cover plate to bond the nonwoven fabric to the cover plate, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

As per claim 8, Seto [740] in view of Conover [165] teach all aspects of the claim except for specifically stating that the nonwoven fabric and the cover plate are bonded by knurling fusion. See Conover [165] col. 9 lines 20-34. Conover [165] teaches the cover plate and the substrate being sealed. It would have been obvious to one having

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ordinary skill in the art at the time the invention was made to have the nonwoven fabric and the cover plate be bonded by knurling fusion, as a matter of obvious design choice.

Response to Arguments

Applicant's arguments with respect to claims 1-2,4-8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Nos. 4,655,899 to Saito et al, 4,171,246 to Hambien et al, 5,520,968 to Wynne et al, 6,004,442 to Choulga et al, and 5,516,703 to Caldwell et al. Saito [899] is considered pertinent because of its teachings of a probe assembly for an apparatus for measuring ionic activity. Hambien [246] is considered pertinent because of its teaching of a method for determining ionic activity of components of liquid drops and a cover plate. Wynne [968] is considered pertinent because of its teaching of a multiplayer second-order nonlinear optical films of head-to-head, mainchain chromophoric polymers. Choulga [442] is considered pertinent because of its teaching of an analyte-selective sensor. Caldwell [703] is considered pertinent because of its teaching of a coating of hydrophobic surfaces to render them protein resistant while permitting covalent attachment of specific ligands.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

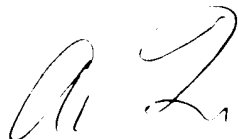
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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Quash whose telephone number is (703)-308-6555. The examiner can normally be reached on M-F from 9 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee, can be reached on (703)-308-4116. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.



A. Quash 5/2/03


JOHN R. LEE
SUPERVISOR, PATENT EXAMINER
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